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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,511	02/05/2004	Anthony Sneed		6556

7590 05/11/2005

Anthony Sneed  
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EXAMINER
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COLLINS, TIMOTHY D

ART UNIT	PAPER NUMBER
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3643

DATE MAILED: 05/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/773,511

Applicant(s)

SNEED, ANTHONY

Examiner

Timothy D Collins

Art Unit

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: mailing information.

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: in the specification when the applicant refers to dates, there is an included "d6/" for example directly preceding the date. This reference is confusing and unnecessary and as such it should be removed. There are many occurrences and each should be corrected.

Appropriate correction is required.

2. Claim 4 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot be dependent from 2 claims at the same time. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits. Note that a claim may be dependent from only one other claim at a time, for example a claim may be dependent from claim "2 or 3".

3. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

### ***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore pressure sensors must

Art Unit: 3643

be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to under 37 CFR 1.83(a) because they fail to show continuity loops as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the

Art Unit: 3643

immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: the telemetry system must have the number 240 included. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective

Art Unit: 3643

action in the next Office action. The objection to the drawings will not be held in abeyance.

7. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the present drawings are of poor quality and must have lines of consistent size and uniform thickness with reference numbers of consistent size as well. Also lines that should be straight are not straight and the outline of the shuttle is not symmetric. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

### **INFORMATION ON HOW TO EFFECT DRAWING CHANGES**

#### **Replacement Drawing Sheets**

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

Art Unit: 3643

### **Annotated Drawing Sheets**

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be clearly labeled as "Annotated Sheet" and must be presented in the amendment or remarks section that explains the change(s) to the drawings.

### **Timing of Corrections**

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may **NOT** be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

### ***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-3 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Regarding claim 1, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

See MPEP § 2173.05(d).

11. Re claim 1, it is unclear whether the detection grid is "beneath or within or on" the thermal surface. For example the claim could also be read as being "beneath and within or on". Clarification is needed with respect to this situation. The examiner takes

Art Unit: 3643

the applicant to mean the first of the examples where the grid is "beneath or within or on" the thermal surface, for the purpose of examination on the merits.

12. Claim 2 recites the limitation "the circuit" and "the detection grid" in line 1. There is insufficient antecedent basis for this limitation in the claim. This is because "a" circuit and "a" detection grid were not positively claimed previously. It is suggested that the applicant merely replace "the" with "a" in both cases. Also, the examiner notes that the applicant may wish for this claim to be dependent from claim 1, as the claims closely follow one another in their purpose and scope.

13. Claim 7 recites the limitation "the design" it is unclear whether the applicant is claiming the physical structure of the grid or the idea of the grid. Also it is unclear if this is intended as a structural limitation, because of the use of "such that if it is on the outside". This statement causes the claim to be hypothetical in nature and seemingly conjecture. Therefore the claim has been treated as best understood for the purposes of examination on the merits. The examiner interprets the claim as calling for a vehicle with a sensor grid made of any material, which if you were to change the vehicle and place the grid on the outside it would burn off during re-entry of the vehicle into the atmosphere.

14. Claim 7 is rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a



Art Unit: 3643

manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

***Claim Rejections - 35 USC § 102***

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by the US Space Shuttle Columbia ( <http://science.ksc.nasa.gov/shuttle/missions/sts-107/mission-sts-107.html> ) (herein after called STS).

a. Re claim 1, STS discloses a detection grid beneath the thermal protection surface of a vehicle (the shuttle). The grid is the system of sensors for temperature of various components (as seen in STS on page 3 in the 3<sup>rd</sup> and 4<sup>th</sup> paragraph, referring to the wheel temp.) and pressure of various area of the shuttle, for example the tire pressure sensors (as seen in STS on page 3, in the 3<sup>rd</sup> and 4<sup>th</sup> paragraph, referring to the tire pressure). These are all beneath the thermal protection inherently because they are inside the shuttle and therefore protected by the thermal tiles of the shuttle. The electrical characteristics of these grid elements are changed when exposed to trauma as seen in STS in that

the sensors indicated rises in temperature. Also note that if the sensors were struck with a micrometeorite and were destroyed by this, then they would also stop functioning and this would be indicated by a lack of sensor data which would alert the crew to the trauma. Also note that it is taken that the phrase "mechanical trauma" includes temperature change, because this is a physical change and not a chemical change. Also further note that the term "may" is functional and renders the rest of the phrase of "may impair the operational characteristics of the vehicle" also functional. Therefore the art cited must only be capable of doing the stated function. In this case, if the sensors show a change or if they disappear as in the case of the micrometeorite then this would impair operational characteristics of the vehicle and it would be reported.

b. Re claim 2, STS discloses a circuit that translates the electrical characteristics of a detection grid into meaningful data. This is seen inherently in that the sensors are electrical and they are reported to the crew on the shuttle and also on the ground as seen on page 3 at least of the STS reference. These signals are transmitting "meaningful digital data" because they have useful information, and also the examiner takes official notice that the data is digital because the shuttle is known to be controlled with digital flight control computers as well as ground computers, as is also seen in the reference on page 3 at the first 3 lines of the 4<sup>th</sup> paragraph. Also it is seen in the STS reference that the values from these sensors are downloadable in that they are sent to the ground station as can be seen in that in the last paragraph of page 3 it states

"communication with the crew and loss of data occurred shortly after". This statement at least shows that the data is transmitted to the ground via telemetry. Also as seen in the 3<sup>rd</sup> page of STS it states "tire pressure sensor caused an onboard alert that was acknowledged by the crew".

c. Re claim 3, STS discloses the redundant inclusion of specific pressure sensors (this can be seen as the tire pressure sensors of the STS), they are considered redundant because the shuttle has multiple tires. They are also within cavities of the thermally-protective surface because they are in the wheel wells which are cavities in the surface of the craft.

d. Re claim 5, STS inherently shows firmware and software in the circuit of the grid because the flight control computers which use the data and display the data have firmware and software which show the data to the crew and send it to the ground. See also rejection of claims 1 and 2 above.

e. Re claim 6, STS also inherently discloses active or passive components at the intersection of grid elements in that there are inherently connectors used for interconnecting the sensors to the wiring harnesses and also other sensors attached to the wiring harnesses. The electrical characteristics are measured as seen in the statements by the examiner in the previous rejections and these measurements will show when other elements fail due to physical trauma as stated previously and seen in the STS reference.

f. Re claim 7, STS discloses a sensor grid made of some material inherently. This grid if placed on the outside of the craft would inherently burn off

Art Unit: 3643

during re-entry because the wires used are not protected by the thermal tiles if placed on the outside of the craft. Note this claim has been treated as best understood due to the questions raised in the 112 rejections seen above.

### ***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following discloses more information on the Space Shuttle.

g. <http://www.answers.com/space%20shuttle%20columbia%20disaster>

h. USPN 3826452 to Little discloses a re-entry vehicle

18. An examination of this application reveals that applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.


A listing of registered patent attorneys and agents is available on the USPTO Internet web site <http://www.uspto.gov> in the Site Index under "Attorney and Agent Roster." Applicants may also obtain a list of registered patent attorneys and agents located in their area by writing to the Mail Stop OED, Director of the U. S. Patent and Trademark Office, PO Box 1450, Alexandria, VA 22313-1450

Art Unit: 3643

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy D Collins whose telephone number is 571-272-6886. The examiner can normally be reached on M-F, 7:00-3:00, with every other Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter M Poon can be reached on 571-272-6891. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Timothy D. Collins  
Patent Examiner  
Art Unit 3643

It appears that the applicant in this application is a *pro se* applicant (an inventor filing the application alone without the benefit of a Patent Attorney or Agent). Applicant may not be aware of the preferred methods of ensuring timely filing of responses to communications from the Office and may wish to consider using the Certificate of Mailing or the Certificate of Transmission procedures outlined below.

### CERTIFICATE OF MAILING

To ensure that the Applicant's mailed response is considered timely filed, it is advisable to include a "certificate of mailing" on at least one page (preferably on the first page) of the response. This "certificate" should consist of the following statement:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: "Commissioner of Patents and Trademarks, P.O. Box 1450, Alexandria, VA 22313-1450" on (date).

(Typed or printed name of the person signing this certificate)

(signature)

### CERTIFICATE OF TRANSMISSION

Alternatively, if applicant wishes to respond by facsimile rather than by mail, another method to ensure that the Applicant's response is considered timely filed, is to include a "certificate of transmission" on at least one page (preferably on the first page) of the response. This method should be used by foreign applicants without access to the U.S. Postal Service. This "certificate" should consist of the following statement:

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (703)\_\_\_\_-\_\_\_\_ on (date).

(Typed or printed name of the person signing this certificate)

(signature)

These "Certificates" may appear anywhere on the page, and may be handwritten or typed. They must be signed, and the date must be the actual date on which it is mailed or transmitted. For the purpose of calculating extensions of time, the date shown on the certificate will be construed as the date on which the paper was received by the Office, regardless of the date the U.S. Postal Service actually delivers the response, or the fax is "date-stamped" in. In this way, postal or transmission delays do not affect the extension-of-time fee.

In the event that a communication is not received by the Office, applicant's submission of a copy of the previously mailed or transmitted correspondence showing the **originally** signed Certificate of Mailing or Transmission statement thereon, along with a statement from the person signing the statement which attests to the timely mailing or transmitting of the correspondence, would be sufficient evidence to entitle the applicant to the mailing or transmission date of the correspondence as listed on the Certificate of Mailing or Transmission, respectively.

**NOTICE TO APPLICANT:** In the case of lost or late responses the use of other "receipt producing" forms of mailing a correspondence to the Patent Office, such as Certified Mail, or a private shipper such as FedEx, **WILL NOT** result in the applicant getting the benefit of the mailing date on such receipts. These receipts are not considered to be acceptable evidence since there is nothing to "tie-in" the receipt with the particular document allegedly submitted.